

09920033 EE002660

SEQUENCE LISTING

<110> Rosanne M. Crooke
Mark J. Graham

<120> ANTISENSE MODULATION OF APOLIPOPROTEIN B EXPRESSION

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Pro Ala Leu Leu Leu Leu Leu Ala Gly Ala Arg Ala Glu Glu Glu
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Gly	Gly	Asn	Thr	Ser	Thr	Asp	His	Phe	Ser	Leu	Arg	Ala	Arg	Tyr	His		
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ttc gat gca tct agt tcc tgg gga cca cag atg tct gct tca gtt cat Phe Asp Ala Ser Ser Ser Trp Gly Pro Gln Met Ser Ala Ser Val His 1455 1460 1465 1470			4538
ttg gac tcc aaa aag aaa cag cat ttg ttt gtc aaa gaa gtc aag att Leu Asp Ser Lys Lys Lys Gln His Leu Phe Val Lys Glu Val Lys Ile 1475 1480 1485			4586
gat ggg cag ttc aga gtc tct tcg ttc tat gct aaa ggc aca tat ggc Asp Gly Gln Phe Arg Val Ser Ser Phe Tyr Ala Lys Gly Thr Tyr Gly 1490 1495 1500			4634
ctg tct tgt cag agg gat cct aac act ggc cgg ctc aat gga gag tcc Leu Ser Cys Gln Arg Asp Pro Asn Thr Gly Arg Leu Asn Gly Glu Ser 1505 1510 1515			4682
aac ctg agg ttt aac tcc tcc tac ctc caa ggc acc aac cag ata aca Asn Leu Arg Phe Asn Ser Ser Tyr Leu Gln Gly Thr Asn Gln Ile Thr 1520 1525 1530			4730
gga aga tat gaa gat gga acc ctc tcc ctc acc tcc acc tct gat ctg Gly Arg Tyr Glu Asp Gly Thr Leu Ser Leu Thr Ser Thr Ser Asp Leu 1535 1540 1545 1550			4778
caa agt ggc atc att aaa aat act gct tcc cta aag tat gag aac tac Gln Ser Gly Ile Ile Lys Asn Thr Ala Ser Leu Lys Tyr Glu Asn Tyr 1555 1560 1565			4826
gag ctg act tta aaa tct gac acc aat ggg aag tat aag aac ttt gcc Glu Leu Thr Leu Lys Ser Asp Thr Asn Gly Lys Tyr Lys Asn Phe Ala 1570 1575 1580			4874
act tct aac aag atg gat atg acc ttc tct aag caa aat gca ctg ctg Thr Ser Asn Lys Met Asp Met Thr Phe Ser Lys Gln Asn Ala Leu Leu 1585 1590 1595			4922
cgt tct gaa tat cag gct gat tac gag tca ttg agg ttc ttc agc ctg Arg Ser Glu Tyr Gln Ala Asp Tyr Glu Ser Leu Arg Phe Phe Ser Leu 1600 1605 1610			4970
ctt tct gga tca cta aat tcc cat ggt ctt gag tta aat gct gac atc Leu Ser Gly Ser Leu Asn Ser His Gly Leu Glu Leu Asn Ala Asp Ile 1615 1620 1625 1630			5018

tta ggc act gac aaa att aat agt ggt gct cac aag gcg aca cta agg	5066
Leu Gly Thr Asp Lys Ile Asn Ser Gly Ala His Lys Ala Thr Leu Arg	
1635 1640 1645	
att ggc caa gat gga ata tct acc agt gca acg acc aac ttg aag tgt	5114
Ile Gly Gln Asp Gly Ile Ser Thr Ser Ala Thr Thr Asn Leu Lys Cys	
1650 1655 1660	
agt ctc ctg gtg ctg gag aat gag ctg aat gca gag ctt ggc ctc tct	5162
Ser Leu Leu Val Leu Glu Asn Glu Leu Asn Ala Glu Leu Gly Leu Ser	
1665 1670 1675	
ggg gca tct atg aaa tta aca aca aat ggc cgc ttc agg gaa cac aat	5210
Gly Ala Ser Met Lys Leu Thr Thr Asn Gly Arg Phe Arg Glu His Asn	
1680 1685 1690	
gca aaa ttc agt ctg gat ggg aaa gcc gcc ctc aca gag cta tca ctg	5258
Ala Lys Phe Ser Leu Asp Gly Lys Ala Ala Leu Thr Glu Leu Ser Leu	
1695 1700 1705 1710	
gga agt gct tat cag gcc atg att ctg ggt gtc gac agc aaa aac att	5306
Gly Ser Ala Tyr Gln Ala Met Ile Leu Gly Val Asp Ser Lys Asn Ile	
1715 1720 1725	
ttc aac ttc aag gtc agt caa gaa gga ctt aag ctc tca aat gac atg	5354
Phe Asn Phe Lys Val Ser Gln Glu Gly Leu Lys Leu Ser Asn Asp Met	
1730 1735 1740	
atg ggc tca tat gct gaa atg aaa ttt gac cac aca aac agt ctg aac	5402
Met Gly Ser Tyr Ala Glu Met Lys Phe Asp His Thr Asn Ser Leu Asn	
1745 1750 1755	
att gca ggc tta tca ctg gac ttc tct tca aaa ctt gac aac att tac	5450
Ile Ala Gly Leu Ser Leu Asp Phe Ser Ser Lys Leu Asp Asn Ile Tyr	
1760 1765 1770	
agc tct gac aag ttt tat aag caa act gtt aat tta cag cta cag ccc	5498
Ser Ser Asp Lys Phe Tyr Lys Gln Thr Val Asn Leu Gln Leu Gln Pro	
1775 1780 1785 1790	
tat tct ctg gta act act tta aac agt gac ctg aaa tac aat gct ctg	5546
Tyr Ser Leu Val Thr Thr Leu Asn Ser Asp Leu Lys Tyr Asn Ala Leu	
1795 1800 1805	
gat ctc acc aac aat ggg aaa cta cgg cta gaa ccc ctg aag ctg cat	5594
Asp Leu Thr Asn Asn Gly Lys Leu Arg Leu Glu Pro Leu Lys Leu His	
1810 1815 1820	
gtg gct ggt aac cta aaa gga gcc tac caa aat aat gaa ata aaa cac	5642
Val Ala Gly Asn Leu Lys Gly Ala Tyr Gln Asn Asn Glu Ile Lys His	
1825 1830 1835	
atc tat gcc atc tct tct gct gcc tta tca gca agc tat aaa gca gac	5690
Ile Tyr Ala Ile Ser Ser Ala Ala Leu Ser Ala Ser Tyr Lys Ala Asp	
1840 1845 1850	

act gtt gct aag gtt cag ggt gtg gag ttt agc cat cgg ctc aac aca	5738
Thr Val Ala Lys Val Gln Gly Val Glu Phe Ser His Arg Leu Asn Thr	
1855 1860 1865 1870	
gac atc gct ggg ctg gct tca gcc att gac atg agc aca aac tat aat	5786
Asp Ile Ala Gly Leu Ala Ser Ala Ile Asp Met Ser Thr Asn Tyr Asn	
1875 1880 1885	
tca gac tca ctg cat ttc agc aat gtc ttc cgt tct gta atg gcc ccg	5834
Ser Asp Ser Leu His Phe Ser Asn Val Phe Arg Ser Val Met Ala Pro	
1890 1895 1900	
ttt acc atg acc atc gat gca cat aca aat ggc aat ggg aaa ctc gct	5882
Phe Thr Met Thr Ile Asp Ala His Thr Asn Gly Asn Gly Lys Leu Ala	
1905 1910 1915	
ctc tgg gga gaa cat act ggg cag ctg tat agc aaa ttc ctg ttg aaa	5930
Leu Trp Gly Glu His Thr Gly Gln Leu Tyr Ser Lys Phe Leu Leu Lys	
1920 1925 1930	
gca gaa cct ctg gca ttt act ttc tct cat gat tac aaa ggc tcc aca	5978
Ala Glu Pro Leu Ala Phe Thr Phe Ser His Asp Tyr Lys Gly Ser Thr	
1935 1940 1945 1950	
agt cat cat ctc gtg tct agg aaa agc atc agt gca gct ctt gaa cac	6026
Ser His His Leu Val Ser Arg Lys Ser Ile Ser Ala Ala Leu Glu His	
1955 1960 1965	
aaa gtc agt gcc ctg ctt act cca gct gag cag aca ggc acc tgg aaa	6074
Lys Val Ser Ala Leu Leu Thr Pro Ala Glu Gln Thr Gly Thr Trp Lys	
1970 1975 1980	
ctc aag acc caa ttt aac aac aat gaa tac agc cag gac ttg gat gct	6122
Leu Lys Thr Gln Phe Asn Asn Asn Glu Tyr Ser Gln Asp Leu Asp Ala	
1985 1990 1995	
tac aac act aaa gat aaa att ggc gtg gag ctt act gga cga act ctg	6170
Tyr Asn Thr Lys Asp Lys Ile Gly Val Glu Leu Thr Gly Arg Thr Leu	
2000 2005 2010	
gct gac cta act cta cta gac tcc cca att aaa gtg cca ctt tta ctc	6218
Ala Asp Leu Thr Leu Leu Asp Ser Pro Ile Lys Val Pro Leu Leu Leu	
2015 2020 2025 2030	
agt gag ccc atc aat atc att gat gct tta gag atg aga gat gcc gtt	6266
Ser Glu Pro Ile Asn Ile Ile Asp Ala Leu Glu Met Arg Asp Ala Val	
2035 2040 2045	
gag aag ccc caa gaa ttt aca att gtt gct ttt gta aag tat gat aaa	6314
Glu Lys Pro Gln Glu Phe Thr Ile Val Ala Phe Val Lys Tyr Asp Lys	
2050 2055 2060	
aac caa gat gtt cac tcc att aac ctc cca ttt ttt gag acc ttg caa	6362
Asn Gln Asp Val His Ser Ile Asn Leu Pro Phe Phe Glu Thr Leu Gln	
2065 2070 2075	
gaa tat ttt gag agg aat cga caa acc att ata gtt gta gtg gaa aac	6410

Glu Tyr Phe Glu Arg Asn Arg Gln Thr Ile Ile Val Val Val Glu Asn	
2080 2085 2090	
gta cag aga aac ctg aag cac atc aat att gat caa ttt gta aga aaa	6458
Val Gln Arg Asn Leu Lys His Ile Asn Ile Asp Gln Phe Val Arg Lys	
2095 2100 2105 2110	
tac aga gca gcc ctg gga aaa ctc cca cag caa gct aat gat tat ctg	6506
Tyr Arg Ala Ala Leu Gly Lys Leu Pro Gln Gln Ala Asn Asp Tyr Leu	
2115 2120 2125	
aat tca ttc aat tgg gag aga caa gtt tca cat gcc aag gag aaa ctg	6554
Asn Ser Phe Asn Trp Glu Arg Gln Val Ser His Ala Lys Glu Lys Leu	
2130 2135 2140	
act gct ctc aca aaa aag tat aga att aca gaa aat gat ata caa att	6602
Thr Ala Leu Thr Lys Lys Tyr Arg Ile Thr Glu Asn Asp Ile Gln Ile	
2145 2150 2155	
gca tta gat gat gcc aaa atc aac ttt aat gaa aaa cta tct caa ctg	6650
Ala Leu Asp Asp Ala Lys Ile Asn Phe Asn Glu Lys Leu Ser Gln Leu	
2160 2165 2170	
cag aca tat atg ata caa ttt gat cag tat att aaa gat agt tat gat	6698
Gln Thr Tyr Met Ile Gln Phe Asp Gln Tyr Ile Lys Asp Ser Tyr Asp	
2175 2180 2185 2190	
tta cat gat ttg aaa ata gct att gct aat att att gat gaa atc att	6746
Leu His Asp Leu Lys Ile Ala Ile Ala Asn Ile Ile Asp Glu Ile Ile	
2195 2200 2205	
gaa aaa tta aaa agt ctt gat gag cac tat cat atc cgt gta aat tta	6794
Glu Lys Leu Lys Ser Leu Asp Glu His Tyr His Ile Arg Val Asn Leu	
2210 2215 2220	
gta aaa aca atc cat gat cta cat ttg ttt att gaa aat att gat ttt	6842
Val Lys Thr Ile His Asp Leu His Leu Phe Ile Glu Asn Ile Asp Phe	
2225 2230 2235	
aac aaa agt gga agt agt act gca tcc tgg att caa aat gtg gat act	6890
Asn Lys Ser Gly Ser Ser Thr Ala Ser Trp Ile Gln Asn Val Asp Thr	
2240 2245 2250	
aag tac caa atc aga atc cag ata caa gaa aaa ctg cag cag ctt aag	6938
Lys Tyr Gln Ile Arg Ile Gln Ile Gln Glu Lys Leu Gln Gln Leu Lys	
2255 2260 2265 2270	
aga cac ata cag aat ata gac atc cag cac cta gct gga aag tta aaa	6986
Arg His Ile Gln Asn Ile Asp Ile Gln His Leu Ala Gly Lys Leu Lys	
2275 2280 2285	
caa cac att gag gct att gat gtt aga gtg ctt tta gat caa ttg gga	7034
Gln His Ile Glu Ala Ile Asp Val Arg Val Leu Leu Asp Gln Leu Gly	
2290 2295 2300	
act aca att tca ttt gaa aga ata aat gat gtt ctt gag cat gtc aaa	7082
Thr Thr Ile Ser Phe Glu Arg Ile Asn Asp Val Leu Glu His Val Lys	

2305	2310	2315	
cac ttt gtt ata aat ctt att ggg gat ttt gaa gta gct gag aaa atc His Phe Val Ile Asn Leu Ile Gly Asp Phe Glu Val Ala Glu Lys Ile 2320 2325 2330			7130
aat gcc ttc aga gcc aaa gtc cat gag tta atc gag agg tat gaa gta Asn Ala Phe Arg Ala Lys Val His Glu Leu Ile Glu Arg Tyr Glu Val 2335 2340 2345 2350			7178
gac caa caa atc cag gtt tta atg gat aaa tta gta gag ttg acc cac Asp Gln Gln Ile Gln Val Leu Met Asp Lys Leu Val Glu Leu Thr His 2355 2360 2365			7226
caa tac aag ttg aag gag act att cag aag cta agc aat gtc cta caa Gln Tyr Lys Leu Lys Glu Thr Ile Gln Lys Leu Ser Asn Val Leu Gln 2370 2375 2380			7274
caa gtt aag ata aaa gat tac ttt gag aaa ttg gtt gga ttt att gat Gln Val Lys Ile Lys Asp Tyr Phe Glu Lys Leu Val Gly Phe Ile Asp 2385 2390 2395			7322
gat gct gtg aag aag ctt aat gaa tta tct ttt aaa aca ttc att gaa Asp Ala Val Lys Lys Leu Asn Glu Leu Ser Phe Lys Thr Phe Ile Glu 2400 2405 2410			7370
gat gtt aac aaa ttc ctt gac atg ttg ata aag aaa tta aag tca ttt Asp Val Asn Lys Phe Leu Asp Met Leu Ile Lys Lys Leu Lys Ser Phe 2415 2420 2425 2430			7418
gat tac cac cag ttt gta gat gaa acc aat gac aaa atc cgt gag gtg Asp Tyr His Gln Phe Val Asp Glu Thr Asn Asp Lys Ile Arg Glu Val 2435 2440 2445			7466
act cag aga ctc aat ggt gaa att cag gct ctg gaa cta cca caa aaa Thr Gln Arg Leu Asn Gly Glu Ile Gln Ala Leu Glu Leu Pro Gln Lys 2450 2455 2460			7514
gct gaa gca tta aaa ctg ttt tta gag gaa acc aag gcc aca gtt gca Ala Glu Ala Leu Lys Leu Phe Leu Glu Glu Thr Lys Ala Thr Val Ala 2465 2470 2475			7562
gtg tat ctg gaa agc cta cag gac acc aaa ata acc tta atc atc aat Val Tyr Leu Glu Ser Leu Gln Asp Thr Lys Ile Thr Leu Ile Ile Asn 2480 2485 2490			7610
tgg tta cag gag gct tta agt tca gca tct ttg gct cac atg aag gcc Trp Leu Gln Glu Ala Leu Ser Ser Ala Ser Leu Ala His Met Lys Ala 2495 2500 2505 2510			7658
aaa ttc cga gag act cta gaa gat aca cga gac cga atg tat caa atg Lys Phe Arg Glu Thr Leu Glu Asp Thr Arg Asp Arg Met Tyr Gln Met 2515 2520 2525			7706
gac att cag cag gaa ctt caa cga tac ctg tct ctg gta ggc cag gtt Asp Ile Gln Gln Glu Leu Gln Arg Tyr Leu Ser Leu Val Gly Gln Val 2530 2535 2540			7754

tat agc aca ctt gtc acc tac att tct gat tgg tgg act ctt gct gct	7802
Tyr Ser Thr Leu Val Thr Tyr Ile Ser Asp Trp Trp Thr Leu Ala Ala	
2545 2550 2555	
aag aac ctt act gac ttt gca gag caa tat tct atc caa gat tgg gct	7850
Lys Asn Leu Thr Asp Phe Ala Glu Gln Tyr Ser Ile Gln Asp Trp Ala	
2560 2565 2570	
aaa cgt atg aaa gca ttg gta gag caa ggg ttc act gtt cct gaa atc	7898
Lys Arg Met Lys Ala Leu Val Glu Gln Gly Phe Thr Val Pro Glu Ile	
2575 2580 2585 2590	
aag acc atc ctt ggg acc atg cct gcc ttt gaa gtc agt ctt cag gct	7946
Lys Thr Ile Leu Gly Thr Met Pro Ala Phe Glu Val Ser Leu Gln Ala	
2595 2600 2605	
ctt cag aaa gct acc ttc cag aca cct gat ttt ata gtc ccc cta aca	7994
Leu Gln Lys Ala Thr Phe Gln Thr Pro Asp Phe Ile Val Pro Leu Thr	
2610 2615 2620	
gat ttg agg att cca tca gtt cag ata aac ttc aaa gac tta aaa aat	8042
Asp Leu Arg Ile Pro Ser Val Gln Ile Asn Phe Lys Asp Leu Lys Asn	
2625 2630 2635	
ata aaa atc cca tcc agg ttt tcc aca cca gaa ttt acc atc ctt aac	8090
Ile Lys Ile Pro Ser Arg Phe Ser Thr Pro Glu Phe Thr Ile Leu Asn	
2640 2645 2650	
acc ttc cac att cct tcc ttt aca att gac ttt gtc gaa atg aaa gta	8138
Thr Phe His Ile Pro Ser Phe Thr Ile Asp Phe Val Glu Met Lys Val	
2655 2660 2665 2670	
aag atc atc aga acc att gac cag atg cag aac agt gag ctg cag tgg	8186
Lys Ile Ile Arg Thr Ile Asp Gln Met Gln Asn Ser Glu Leu Gln Trp	
2675 2680 2685	
ccc gtt cca gat ata tat ctc agg gat ctg aag gtg gag gac att cct	8234
Pro Val Pro Asp Ile Tyr Leu Arg Asp Leu Lys Val Glu Asp Ile Pro	
2690 2695 2700	
cta gcg aga atc acc ctg cca gac ttc cgt tta cca gaa atc gca att	8282
Leu Ala Arg Ile Thr Leu Pro Asp Phe Arg Leu Pro Glu Ile Ala Ile	
2705 2710 2715	
cca gaa ttc ata atc cca act ctc aac ctt aat gat ttt caa gtt cct	8330
Pro Glu Phe Ile Ile Pro Thr Leu Asn Leu Asn Asp Phe Gln Val Pro	
2720 2725 2730	
gac ctt cac ata cca gaa ttc cag ctt ccc cac atc tca cac aca att	8378
Asp Leu His Ile Pro Glu Phe Gln Leu Pro His Ile Ser His Thr Ile	
2735 2740 2745 2750	
gaa gta cct act ttt ggc aag cta tac agt att ctg aaa atc caa tct	8426
Glu Val Pro Thr Phe Gly Lys Leu Tyr Ser Ile Leu Lys Ile Gln Ser	
2755 2760 2765	

cct Pro	ctt Leu	ttc Phe	aca Thr 2770	tta Leu	gat Asp	gca Ala	aat Asn	gct Ala 2775	gac Asp	ata Ile	ggg Gly	aat Asn	gga Gly 2780	acc Thr	acc Thr	8474
tca Ser	gca Ala	aac Asn 2785	gaa Glu	gca Ala	ggt Gly	atc Ile	gca Ala 2790	gct Ala	tcc Ser	atc Ile	act Thr	gcc Ala 2795	aaa Lys	gga Gly	gag Glu	8522
tcc Ser	aaa Lys 2800	tta Leu	gaa Glu	gtt Val	ctc Leu	aat Asn 2805	ttt Phe	gat Asp	ttt Phe	caa Gln 2810	gca Ala	aat Asn	gca Ala	caa Gln	ctc Leu	8570
tca Ser 2815	aac Asn	cct Pro	aag Lys	att Ile	aat Asn 2820	ccg Pro	ctg Leu	gct Ala	ctg Leu	aag Lys 2825	gag Glu	tca Ser	gtg Val	aag Lys	ttc Phe 2830	8618
tcc Ser	agc Ser	aag Lys	tac Tyr	ctg Leu 2835	aga Arg	acg Thr	gag Glu	cat His	ggg Gly 2840	agt Ser	gaa Glu	atg Met	ctg Leu	ttt Phe 2845	ttt Phe	8666
gga Gly	aat Asn	gct Ala	att Ile 2850	gag Glu	gga Gly	aaa Lys	tca Ser	aac Asn 2855	aca Thr	gtg Val	gca Ala	agt Ser	tta Leu 2860	cac His	aca Thr	8714
gaa Glu	aaa Lys	aat Asn 2865	aca Thr	ctg Leu	gag Glu	ctt Leu	agt Ser 2870	aat Asn	gga Gly	gtg Val	att Ile	gtc Val 2875	aag Lys	ata Ile	aac Asn	8762
aat Asn	cag Gln 2880	ctt Leu	acc Thr	ctg Leu	gat Asp	agc Ser 2885	aac Asn	act Thr	aaa Lys	tac Tyr	ttc Phe 2890	cac His	aaa Lys	ttg Leu	aac Asn	8810
atc Ile 2895	ccc Pro	aaa Lys	ctg Leu	gac Asp	ttc Phe 2900	tct Ser	agt Ser	cag Gln	gct Ala 2905	gac Asp	ctg Leu	cgc Arg	aac Asn	gag Glu	atc Ile 2910	8858
aag Lys	aca Thr	ctg Leu	ttg Leu	aaa Lys 2915	gct Ala	ggc Gly	cac His	ata Ile	gca Ala 2920	tgg Trp	act Thr	tct Ser	tct Ser	gga Gly 2925	aaa Lys	8906
ggg Gly	tca Ser	tgg Trp	aaa Lys 2930	tgg Trp	gcc Ala	tgc Cys	ccc Pro	aga Arg 2935	ttc Phe	tca Ser	gat Asp	gag Glu	gga Gly 2940	aca Thr	cat His	8954
gaa Glu	tca Ser	caa Gln 2945	att Ile	agt Ser	ttc Phe	acc Thr	ata Ile 2950	gaa Glu	gga Gly	ccc Pro	ctc Leu	act Thr 2955	tcc Ser	ttt Phe	gga Gly	9002
ctg Leu	tcc Ser	aat Asn 2960	aag Lys	atc Ile	aat Asn	agc Ser 2965	aaa Lys	cac His	cta Leu	aga Arg	gta Val 2970	aac Asn	caa Gln	aac Asn	ttg Leu	9050
gtt Val 2975	tat Tyr	gaa Glu	tct Ser	ggc Gly	tcc Ser 2980	ctc Leu	aac Asn	ttt Phe	tct Ser	aaa Lys 2985	ctt Leu	gaa Glu	att Ile	caa Gln	tca Ser 2990	9098
caa	gtc	gat	tcc	cag	cat	gtg	ggc	cac	agt	gtt	cta	act	gct	aaa	ggc	9146

Gln Val Asp Ser	Gln His Val Gly His	Ser Val Leu Thr	Ala Lys Gly	
	2995	3000	3005	
atg gca ctg ttt gga gaa ggg aag gca gag ttt act ggg agg cat gat	9194			
Met Ala Leu Phe Gly Glu Gly Lys Ala Glu Phe Thr Gly Arg His Asp				
	3010	3015	3020	
gct cat tta aat gga aag gtt att gga act ttg aaa aat tct ctt ttc	9242			
Ala His Leu Asn Gly Lys Val Ile Gly Thr Leu Lys Asn Ser Leu Phe				
	3025	3030	3035	
ttt tca gcc cag cca ttt gag atc acg gca tcc aca aac aat gaa ggg	9290			
Phe Ser Ala Gln Pro Phe Glu Ile Thr Ala Ser Thr Asn Asn Glu Gly				
	3040	3045	3050	
aat ttg aaa gtt cgt ttt cca tta agg tta aca ggg aag ata gac ttc	9338			
Asn Leu Lys Val Arg Phe Pro Leu Arg Leu Thr Gly Lys Ile Asp Phe				
	3055	3060	3065	3070
ctg aat aac tat gca ctg ttt ctg agt ccc agt gcc cag caa gca agt	9386			
Leu Asn Asn Tyr Ala Leu Phe Leu Ser Pro Ser Ala Gln Gln Ala Ser				
	3075	3080	3085	
tgg caa gta agt gct agg ttc aat cag tat aag tac aac caa aat ttc	9434			
Trp Gln Val Ser Ala Arg Phe Asn Gln Tyr Lys Tyr Asn Gln Asn Phe				
	3090	3095	3100	
tct gct gga aac aac gag aac att atg gag gcc cat gta gga ata aat	9482			
Ser Ala Gly Asn Asn Glu Asn Ile Met Glu Ala His Val Gly Ile Asn				
	3105	3110	3115	
gga gaa gca aat ctg gat ttc tta aac att cct tta aca att cct gaa	9530			
Gly Glu Ala Asn Leu Asp Phe Leu Asn Ile Pro Leu Thr Ile Pro Glu				
	3120	3125	3130	
atg cgt cta cct tac aca ata atc aca act cct cca ctg aaa gat ttc	9578			
Met Arg Leu Pro Tyr Thr Ile Ile Thr Thr Pro Pro Leu Lys Asp Phe				
	3135	3140	3145	3150
tct cta tgg gaa aaa aca ggc ttg aag gaa ttc ttg aaa acg aca aag	9626			
Ser Leu Trp Glu Lys Thr Gly Leu Lys Glu Phe Leu Lys Thr Thr Lys				
	3155	3160	3165	
caa tca ttt gat tta agt gta aaa gct cag tat aag aaa aac aaa cac	9674			
Gln Ser Phe Asp Leu Ser Val Lys Ala Gln Tyr Lys Lys Asn Lys His				
	3170	3175	3180	
agg cat tcc atc aca aat cct ttg gct gtg ctt tgt gag ttt atc agt	9722			
Arg His Ser Ile Thr Asn Pro Leu Ala Val Leu Cys Glu Phe Ile Ser				
	3185	3190	3195	
cag agc atc aaa tcc ttt gac agg cat ttt gaa aaa aac aga aac aat	9770			
Gln Ser Ile Lys Ser Phe Asp Arg His Phe Glu Lys Asn Arg Asn Asn				
	3200	3205	3210	
gca tta gat ttt gtc acc aaa tcc tat aat gaa aca aaa att aag ttt	9818			
Ala Leu Asp Phe Val Thr Lys Ser Tyr Asn Glu Thr Lys Ile Lys Phe				

3215	3220	3225	3230	
gat aag tac aaa gct gaa aaa tct cac gac gag ctc ccc agg acc ttt				9866
Asp Lys Tyr Lys Ala Glu Lys Ser His Asp Glu Leu Pro Arg Thr Phe				
3235		3240	3245	
caa att cct gga tac act gtt cca gtt gtc aat gtt gaa gtg tct cca				9914
Gln Ile Pro Gly Tyr Thr Val Pro Val Val Asn Val Glu Val Ser Pro				
3250		3255	3260	
ttc acc ata gag atg tcg gca ttc ggc tat gtg ttc cca aaa gca gtc				9962
Phe Thr Ile Glu Met Ser Ala Phe Gly Tyr Val Phe Pro Lys Ala Val				
3265		3270	3275	
agc atg cct agt ttc tcc atc cta ggt tct gac gtc cgt gtg cct tca				10010
Ser Met Pro Ser Phe Ser Ile Leu Gly Ser Asp Val Arg Val Pro Ser				
3280		3285	3290	
tac aca tta atc ctg cca tca tta gag ctg cca gtc ctt cat gtc cct				10058
Tyr Thr Leu Ile Leu Pro Ser Leu Glu Leu Pro Val Leu His Val Pro				
3295		3300	3305	3310
aga aat ctc aag ctt tct ctt cca cat ttc aag gaa ttg tgt acc ata				10106
Arg Asn Leu Lys Leu Ser Leu Pro His Phe Lys Glu Leu Cys Thr Ile				
3315		3320	3325	
agc cat att ttt att cct gcc atg ggc aat att acc tat gat ttc tcc				10154
Ser His Ile Phe Ile Pro Ala Met Gly Asn Ile Thr Tyr Asp Phe Ser				
3330		3335	3340	
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Arg Gly Leu Lys Leu Ala Thr Ala Leu Ser Leu Ser Asn Lys Phe Val				
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